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ABSTRACT

A method and system to automatically restart a permanent magnet turbogenerator/motor when a fatal fault is detected. The automatic restart logic includes time constraints and limitations on the number of iterations, and is useful regardless of whether the 5 permanent magnet turbogenerator/motor is in a grid connect mode or a standalone mode, and regardless of how the fatal fault originates or is detected. Additional control logic is utilized to handle grid transients and over load conditions to prevent a fatal fault from occurring by using time constraints and an iterative process, together with a brake resistor to control DC bus voltage.